

Nalco Docket No. 7701
Customer Number: 49459

REMARKS

Applicants are submitting this Amendment and Response to Office Action within two (2) months of the Final Office Action, dated December 22, 2006. Claims 1 to 21 are pending in this Application. The Office Action rejected Claims 1 to 21 under 35 U.S.C. § 103(a). Applicants have amended Claims 1, 18, and 20 to clarify the elements of those claims and to further the prosecution of this Application. Claim 19 was amended to correct a dependency error. Applicants have also amended the Specification to correct minor grammatical errors. These amendments do not add new matter.

The Office Action rejected Claims 1 to 21 under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 6,762,832 B2 to Fisher et al. ("Fisher") in view of U.S. Patent No. 5,278,074 to Rao et al. ("Rao"). Applicants respectfully disagree with and traverse this rejection for at least the reasons described below. Support for the amendments to Claims 1, 18, and 20 is found at least at page 9, lines 1 to 27, and page 11, lines 11 to 14.

Fisher discloses a method for monitoring the concentration of a component in a composition in semiconductor processing. The method includes measuring the light absorbance of a sample of the composition to determine the concentration of the component in the composition based on the absorption measurement. Within a narrow concentration range, known calibration data is used to convert the measured absorbance to a concentration for the component. The concentration of the component can be adjusted to a desired level.

Rao discloses a method of measuring the concentration of a corrosion inhibitor in industrial water systems by fluorescence monitoring. Rao provides exemplary water systems including boilers, cooling water systems, and other water streams, in particular industrial scale water streams. The method includes fluorometrically monitoring the concentration of an aromatic azole corrosion inhibitor in an industrial water system and adjusting the concentration of the azole based on the monitored fluorescence.

Amended Claim 1 (and Claims 2 to 17 that depend therefrom) relates to a method of inhibiting corrosion of copper plated or metallized surfaces and circuitry in semiconductor devices immersed in an ultrapure aqueous fluid in a treatment bath. The method includes

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adding to the aqueous fluid an effective corrosion inhibiting amount of one or more aromatic triazole corrosion inhibitors. The method further includes fluorometrically monitoring the concentration of aromatic triazole corrosion inhibitors in the aqueous fluid and compensating the fluorometric monitoring based upon a measured temperature and a measured pH. If needed, additional aromatic triazole corrosion inhibitor is added to the aqueous fluid to maintain an effective corrosion inhibiting concentration of the aromatic triazole corrosion inhibitor in the aqueous fluid.

Amended Claim 18 (and Amended Claim 19 that depends therefrom) relates to a treatment bath for copper plated or metallized semiconductor devices including an inlet and an outlet. Among other elements, this claim includes a monitoring and control means including a flowcell installed in the fluid transfer line for fluorometrically determining the concentration of the aromatic triazole corrosion inhibitor in the ultrapure aqueous fluid. The monitoring and control means includes a means to compensate for a measured temperature and a measured pH.

Amended Claim 20 (and Claim 21 that depends therefrom) is directed to a treatment bath for copper plated or metallized semiconductor devices including an inlet, an outlet, and a side-stream sample line. Among other elements, this claim includes a monitoring and control means including a flowcell installed in the side-stream sample line for fluorometrically determining the concentration of aromatic triazole corrosion inhibitor in the ultrapure aqueous fluid. The monitoring and control means includes a means to compensate for a measured temperature and a measured pH.

Fisher in view of Rao does not teach or suggest methods of inhibiting corrosion of copper plated or metallized surfaces and circuitry in semiconductor devices in an ultrapure aqueous fluid in a treatment bath as recited in Amended Claims 1, 18, and 20. Specifically, Fisher in view of Rao does not teach or suggest fluorometrically monitoring the concentration of an aromatic triazole in the aqueous fluid and compensating the fluorometric monitoring based upon a measured temperature and a measured pH. Nor does Fisher in view of Rao teach or suggest a treatment bath for copper plated or metallized semiconductor devices having a having a fluorometric monitoring and control means for determining the

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concentration of aromatic triazole corrosion inhibitor in an ultrapure fluid, including a means to compensate for a measured temperature and a measured pH.

Instead, Fisher discloses a method of determining concentration of a component based on light absorption. Rao discloses a method of fluorometrically monitoring the concentration of a triazole corrosion inhibitor in water systems including boilers, cooling water systems, and other water streams, in particular industrial scale water streams. Nothing in these references teaches or suggests compensation of fluorometric monitoring of triazole corrosion inhibitors in an ultrapure aqueous fluid based on measured temperature and measured pH.

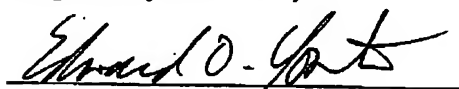
Therefore, Applicants respectfully assert that Amended Claim 1 (and Claims 2 to 17 that depend therefrom), Amended Claim 18 (and Amended Claim 19 that depends therefrom), and Amended Claim 20 (and Claim 21 that depends therefrom) are patentably distinct from Fisher in view of Rao and are in condition for allowance. Applicants respectfully request that this rejection be withdrawn.

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CONCLUSION

In view of the foregoing amendment and remarks, Applicants respectfully request withdrawal of the rejections under 35 U.S.C. § 103(a) and respectfully assert that pending Claims 1 to 21 of this Application are in condition for allowance. Early notice to this effect is earnestly solicited.

Respectfully Submitted,



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